



Permaweb

Description

Data objects are different than physical objects. Data files can be fragmented and distributed across storage locations, then re-assembled instantly as needed. Even on my laptop, files are stored in different parts of a hard disk (or flash drive) as fragments. Networks of personal computers can also host distributed file fragments.

The most recent innovation in the area of distributed storage exploits the idea of the [blockchain](#), under the proprietary name of Arweave. According to <https://www.arweave.org>

As a collectively owned hard drive that never forgets, Arweave allows us to remember and preserve valuable information, apps, and history indefinitely. By preserving history, it prevents others from rewriting it.

Blockchains store fairly simple information, such as financial transaction, e.g. a line in a bank ledger plus a hash string linking transactions together in a time sequence. Hence, the original use case is the support of cryptocurrencies, bitcoin. The idea is that no information can be changed, as each successive block of transactions contains a trace of previous transactions. As transactions are entered into the blockchain system, the chain of transaction data is automatically duplicated and distributed across a network of trusted validators.

Developers are working on methods for storing and securing much larger blocks of data than collections of financial transactions: documents, pictures, video files, databases. A helpful article by M. Legault identifies different digital storage strategies, including Arweave.

Arweave deploys blockchain methods to distribute and secure data. Summarising an article by Williams and Jones, Legault explains that blocks of data in Arweave are cryptographically entangled with every other previous block in the network. The network of validators will detect any attempt to change the contents of a file and reject it from the network. That preserves the integrity of the data, and ensures its longevity.

Iâ??m still trying to access some current permaweb data archives. Access involves a browser extension plugin and wallet of tokens. A wiki entry titled [My Top 5 Arweave Archives](#) provides some alluring subject lines

- Hereâ??s Why Facebook Removing That Vietnam War Photo Is So Important
- Lifetimes of cryptographic hash functions
- The Gulag Archipelago
- How social media users have discussed sexual harassment since #MeToo went viral
- It takes three times more energy to mine Bitcoin than gold.

References

- Legault, M. 2021. A Practitionerâ??s View on Distributed Storage Systems: Overview, Challenges and Potential Solutions. *Technology Innovation Management Review*, (11) 6, 32-41.
- Williams, Samuel, and William Jones. 2018. Arweave Lightpaper. Arweave. Available online: <https://whitepaper.io/coin/arweave> (accessed 9 March 2022).

Category

1. Media

Tags

1. blockchain
2. permaweb

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